

forgotten. These Batrachia, furnished with branchiæ, reproducing in a very usual fashion, seemed to have attained their definitive form; and in consequence of this belief they were classed in a particular group, the Perennibranchia. In 1865 M. A. Duméril saw the axolotls lose their branchiæ and become transformed in the same way as the larvæ of the Tritons and Salamanders; they became *Amblystomata*, the name given long before to certain Batrachia the metamorphoses of which were not known. For more than ten years these animals displayed no aptitude for reproduction.

In the autumn of 1874 the new menagerie of the Museum was established; and then it was endeavoured to furnish the animals with varied situations in order that they might follow the impulses of their nature; from this moment the Amblystomes have led a more active life. M. L. Vaillant, who was in August last, as Professor at the Museum, called to the direction of the Menagerie of Reptiles, has taken all imaginable care for the observation of biological phenomena; and it is thus that he has just obtained the reproduction of the Amblystomes. He proposes to follow, with all possible attention, the phases of the development of the larvæ, which, no doubt, will soon be hatched.

Henceforward we have evidence that the Batrachian which is successively axolotl and *Amblystoma* does not by any means depart from the category of many cold-blooded animals, which, being capable of reproducing when young, nevertheless do not cease to be fertile when they are completely adult.—*Comptes Rendus*, March 27, 1876, p. 916.

#### *On supposed Embryos of Ichthyosaurus.*

By Prof. PETER MERIAN.

In 1824, in his memoir 'De Ichthyosauri speciminibus,' and again in 1828, in his fossil Reptilia of Württemberg, J. G. Jäger gives a plate showing a small *Ichthyosaurus* enclosed within the ribs of another specimen about four times as large. As the head of the smaller individual was directed towards the posterior extremity of the larger one, Jäger thought that it might be the skeleton of an embryo still in its original position within the body of the mother, and hence that the *Ichthyosaurus* in question might be viviparous. This view he laid before the meeting of German naturalists in 1842, and afterwards published in the 'Münchener gelehrte Anzeigen' in 1852 (p. 33), when he also called attention to a similar observation made in England by Mr. J. Channing Pierce, and communicated by him to this Journal (Ann. Nat. Hist. ser. 1, vol. xvii. p. 44, 1846).

M. E. Meyrat, of Birsfelden, has obtained from the Upper Lias of the neighbourhood of Ohmden in Württemberg (the same bed that furnished Jäger's specimen) a fine perfect skeleton of *Ichthyosaurus avirostris*, within the ribs of which there is a smaller skeleton apparently of the same species; but in this case the head of the small specimen is turned towards the front of the larger one. Professor Merian thinks that this position of so large an individual is hardly com-

patible with its being an embryo, and that it is more probable that the enclosed skeleton is that of a small individual which had been swallowed by the larger one as food. The specimen is in the Museum at Geneva.—*Verhandl. der Naturf. Gesellschaft in Basel*, part vi. p. 343, 1875.

*On the Periodical Movements of the Leaves in Abies Nordmanniana.*  
By M. J. CHATIN.

*Abies Nordmanniana* is a Conifer which is now widely diffused, on account of the elegant coloration of its leaves, of which the lower surface is whitish, while the upper surface is of a fine deep green.

Now if this tree is observed early in the morning, or in the decline of the day, its foliage appears uniformly whitish; but in the middle of the day the green tint seems general. On attempting to explain this difference of coloration, it is found to result from a special position of the leaves, which varies during the day and during the night: in the former case the leaves are spread out upon the branch and present their upper surface, producing the greenish aspect of the foliage; during the latter period, on the contrary, it is the lower surface that is presented to the spectator; and this causes the whitish tint of the *Abies*.

Thus there is a *diurnal* and a *nocturnal position*. This merits particular attention on account of the phenomena which cause it: we see the leaves, which are at first horizontal, gradually erect themselves upon the branch, so as to become often nearly perpendicular to the branch; but at the same time this movement of erection is accompanied by a movement of torsion impressed upon the basal part of the leaf, and which may frequently traverse an arc of 90 degrees. In this respect the leaves of the upper branches seem to undergo a sort of accommodation which enables this torsion to persist in them, at least partially. This, however, is a peculiar fact which I shall only indicate at present, with the intention of treating it soon in more detail in another communication, in which I shall have the honour of presenting to the Academy the results furnished by experiments which will soon be completed, and which I have undertaken with the object of ascertaining, in *Abies Nordmanniana* and some other allied forms, the causes and mechanism of the phenomena here mentioned, and the analysis of which enables me to examine, in their principal details, these *movements of torsion*, upon which vegetable physiology possesses but few data. From another point of view their study enables us to extend to the Gymnosperms the existence of the spontaneous movements which old observers have indicated in many Dicotyledons, which M. Brongniart has described in several Monocotyledons, and which, as the present example clearly shows, occur in the three great divisions of phanerogamous plants.—*Comptes Rendus*, January 10, 1876, p. 171.